

**Project No. 1251-100**  
**Crude Oil Tank Farms Project, Agrood Area 30 (Module-1)**



**EGPC**

<b>System ID</b>	<b>030-EL-013</b>
<b>System Description</b>	<b>Plant Area Earthing System</b>

<b>Sr.</b>	<b>Pre-Commissioning and Commissioning Dossier Index</b>	<b>Applicable (Yes/No)</b>
<b>1</b>	<b>Mechanical Completion Certificate (MCC)</b>	
<b>2</b>	<b>Ready for Startup Certificate (RFSU)</b>	
<b>3</b>	<b>System Punch Lists</b>	
<b>4</b>	<b>System Limits Marked Up P&amp;ID</b>	
<b>5</b>	<b>System Index</b>	
<b>6</b>	<b>Piping Pre-Commissioning</b>	
	6.01) Piping Test Packs	
	6.02) Piping Pre-commissioning Check Lists	
<b>7</b>	<b>Piping Commissioning</b>	
	7.01) Service Test, GLT, CLT and N2 Purging Certificates	
	7.02) Piping Commissioning Check Lists	
<b>Sr.</b>	<b>Pre-Commissioning and Commissioning Dossier Index</b>	<b>Applicable (Yes/No)</b>
<b>8</b>	<b>Mechanical Pre-Commissioning</b>	
	8.01) System Mechanical Index	
	8.02) Equipment Drawings	
	8.03) Equipment Datasheets	
	8.04) Boxing-up Certificates	

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	10.10) Instruments Calibration Certificates	
	10.11) Instrument Loop Checks Certificates	
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	11.01) Instrumentation Function Test Certificates	
	11.02) Instrumentation Supplier Check Lists & Reports	
<b>Sr.</b>	<b>Pre-Commissioning and Commissioning Dossier Index</b>	<b>Applicable (Yes/No)</b>
<b>12</b>	<b>Electrical Pre-Commissioning</b>	
	12.01) System Electrical Index	
	12.02) Electrical Drawings	
	12.03) Motor Datasheets	
	12.04) Electrical Cables Schedule	
	12.05) Electrical Cables Laying Certificates	
	12.06) Electrical Cables Testing Certificates	
	12.07) Electrical Cables Termination Certificates	
	12.08) FAT Reports & Certificates	
	12.09) SAT Reports & Certificates	
	12.10) Electrical Pre-Commissioning Check Lists	
	12.11) Electrical Supplier Check Lists & Reports	

<b>13</b>	<b>Electrical Commissioning</b>	
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	13.02) Electrical Supplier Check Lists & Reports	
<b>14</b>	<b>Red Marked-up Drawings</b>	
	14.01) P&ID	
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Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
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### 1-Mechanical Completion Certificate (MCC)





## SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

**PROJECT TITLE** : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

**PROJECT No** : 01251-100

**SYSTEM NAME** : Plant Area Earthing System

**SYSTEM ID** : 030-EL-013

### THIS IS TO CERTIFY THAT:

- THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.
- ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.
- Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.
- ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.
- THIS SYTEM IS MECHANICALLY COMPLETED ON THE DATE AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.

### EXCEPTIONS :

COMPANY	PETROJET	ENPPI	PMC
NAME	Sobhy Eileen	Mohamed Abhay	Mohamed Ibrahim
TITLE	QC & SI engineer	Construction Mgr	
SIGNATURE			
DATE	31/6/2021		

## SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

**PROJECT TITLE** : CRUDE OIL TANK FARM(AGROOD AREA)

**PROJECT No** : 1251-100

**SYSTEM NAME** : Plant Area Earthing System

**SYSTEM ID** : 030-EL-013

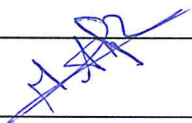
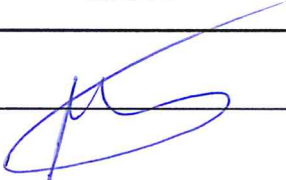

### THIS IS TO CERTIFY THAT:

- THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.
- ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.
- Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.
- ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.
- THIS SYTEM IS MECHANICALLY COMPLETED ON THE DATE AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.

### EXCEPTIONS :

*Partial for tank 3 only.*

**NOTE: ACCEPTANCE OF THE ABOVE SYSTEM DOES NOT RELIEVE ENPPI/CONSTRUCTION CONTRACTOR FROM THEIR CONTRACTUAL OBLIGATIONS AND RESPONSIBILITIES.**

COMPANY	PETROJET	ENPPI	PPC
NAME			
TITLE			
SIGNATURE			
DATE			



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 2- Ready for Startup Certificate (RFSU)



## READY FOR START UP CERTIFICATE

PROJECT TITLE : EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-30)

PROJECT No. : 1251-100


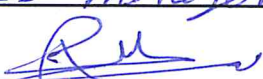

SYSTEM /AREA /PLANT : Plant Area Earthing System

SYSTEM /AREA /PLANT No. : 030-EL-013

### THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

### EXCEPTIONS :

COMPANY	ENPPI	PPC
NAME	Ahmed El Shafie	Mohamed Ibrahim
TITLE	Commissioning Manager	Elec. manager
SIGNATURE		
DATE	10.10.21	








Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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### 3- System Punch Lists



COMPANY	PTJ	ENPPI	PMC
NAME			
SIGN.			
DATE			



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#### 4- System Limits Marked Up P&ID



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## 5- System Index





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## 6- Piping Pre-Commissioning



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## 6.01- Piping Test Packs



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## 6.02- Piping Pre-commissioning Check Lists



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## 7- Piping Commissioning





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## 7.01- Service Test, GLT, CLT and N2 Purging Certificates



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## 7.02- Piping Commissioning Check Lists



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## 8- Mechanical pre-Commissioning



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System ID	030-EL-013
System Description	Plant Area Earthing System

## 8.01- System Mechanical Index





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## 8.02- Equipment Drawings



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CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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### 8.03- Equipment Datasheets



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## 8.04- Boxing-up Certificates



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## 8.05- Grouting Certificates



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## 8.06- Pre-Alignment Certificates



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## 8.07- Mechanical Pre-Commissioning Checklists



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## 9- Mechanical Commissioning





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## 9.01- Final Alignment Certificates



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## 9.02- Motor Solo Run Certificates



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### 9.03- Mechanical Run Test (MRT) Certificates



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## 9.04- Mechanical Commissioning Checklists



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## 9.05- Mechanical Supplier Check Lists & Reports



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## 10- Instrumentation Pre-Commissioning



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## 10.01- System Instrument Index





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System ID	030-EL-013
System Description	Plant Area Earthing System

## 10.02- Instrument Data Sheets



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### 10.03- Instrument Cable Schedule



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## 10.04- System Instrumentation Wiring Diagram



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## 10.05- Hook-up Drawing (Mechanical & Pneumatic)



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## 10.06- Instruments Cables Schedule



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System ID	030-EL-013
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## 10.07- Instruments Cables Laying Certificates





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## 10.08- Instruments Cables Termination Certificates



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System ID	030-EL-013
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## 10.09- Instruments Cables Testing Certificates



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System ID	030-EL-013
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## 10.10- Instruments Calibration Certificates



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## 10.11- Instrument Loop Checks Certificates



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## 10.12- Instrumentation Pre-Commissioning Check Lists



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### 10.13- Instrumentation Supplier Check Lists & Reports



System ID	030-EL-013
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## 11- Instrumentation Commissioning



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System ID	030-EL-013
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## 11.01) Instrumentation Function Test Certificates



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## 11.02- Instrumentation Supplier Check Lists & Reports



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## 12- Electrical Pre-Commissioning



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CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.01- System Electrical Index

System Description	Discipline	Tag Number	Tag Description	Form Type	Check Forms ID
030-EL-013	Plant Area Earthing System	Electrical	Earthing	Checklist	EL-33 A



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

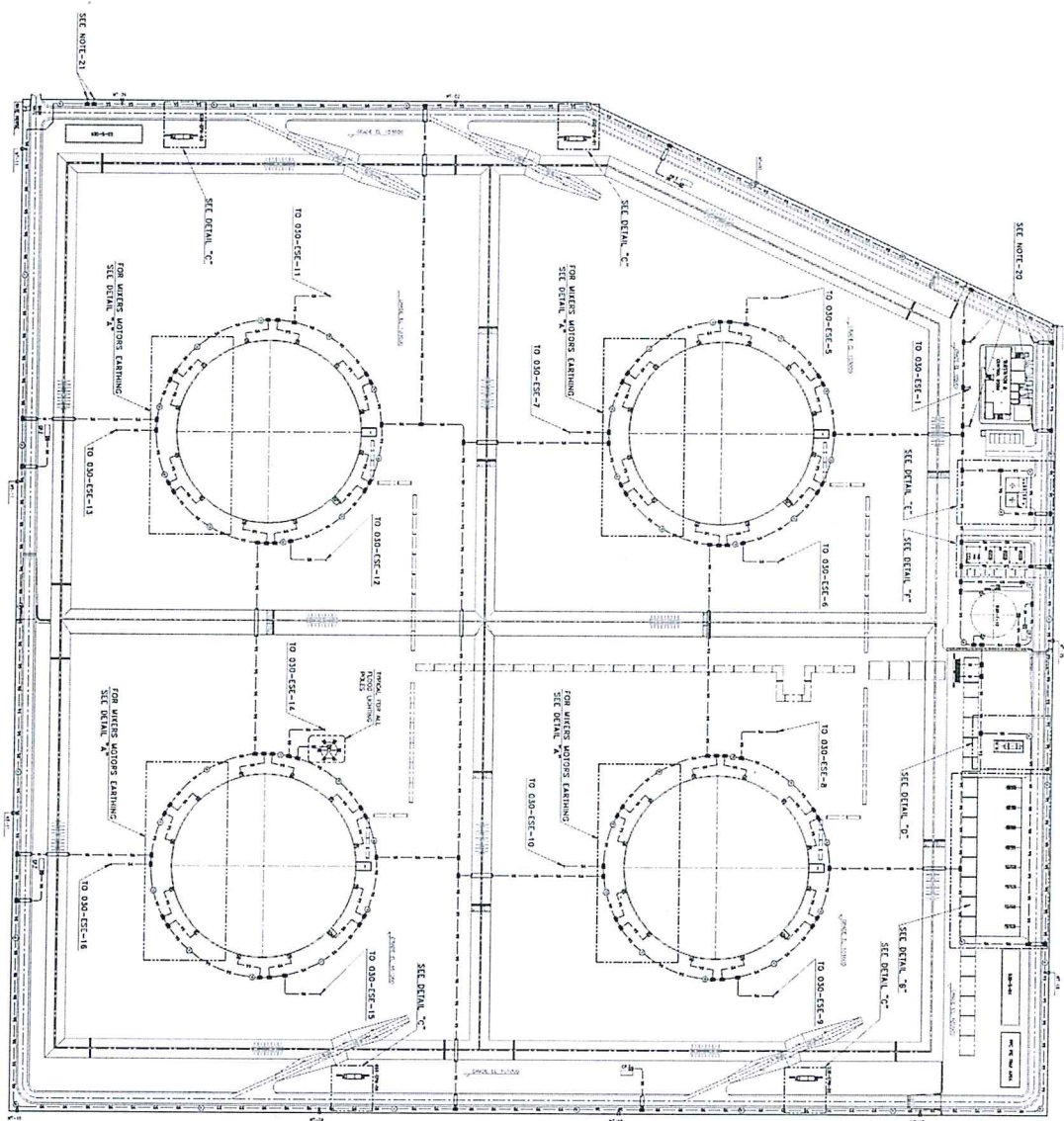
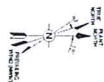


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System Description	Plant Area Earthing System

## 12.02- Electrical Drawings



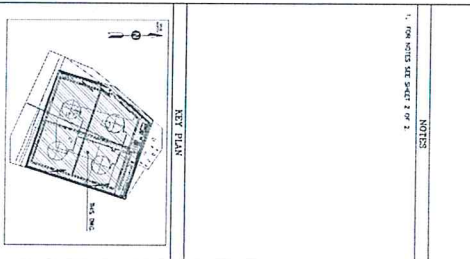




REFERENCE DRAWINGS AND DOCUMENTS

DOCUMENT NUMBER	REVISION	DATE
01231-100-010-010-001	1	11/07/01
01231-100-010-010-001	2	11/07/01
01231-100-010-010-001	3	11/07/01
01231-100-010-010-001	4	11/07/01
01231-100-010-010-001	5	11/07/01
01231-100-010-010-001	6	11/07/01
01231-100-010-010-001	7	11/07/01
01231-100-010-010-001	8	11/07/01
01231-100-010-010-001	9	11/07/01
01231-100-010-010-001	10	11/07/01

- NOTES
1. FOR THE EOPC, SEE SHEET 1 OF 2.
  2. FOR THE EOPC, SEE SHEET 1 OF 2.
  3. FOR THE EOPC, SEE SHEET 1 OF 2.
  4. FOR THE EOPC, SEE SHEET 1 OF 2.
  5. FOR THE EOPC, SEE SHEET 1 OF 2.
  6. FOR THE EOPC, SEE SHEET 1 OF 2.
  7. FOR THE EOPC, SEE SHEET 1 OF 2.
  8. FOR THE EOPC, SEE SHEET 1 OF 2.
  9. FOR THE EOPC, SEE SHEET 1 OF 2.
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EGPC

EGPC CRUDE OIL TANK FARM

AGROOD AREA (MODULE-1)

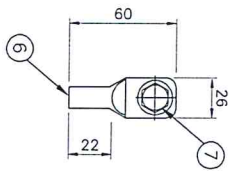
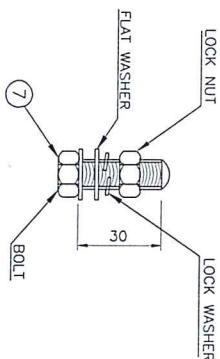
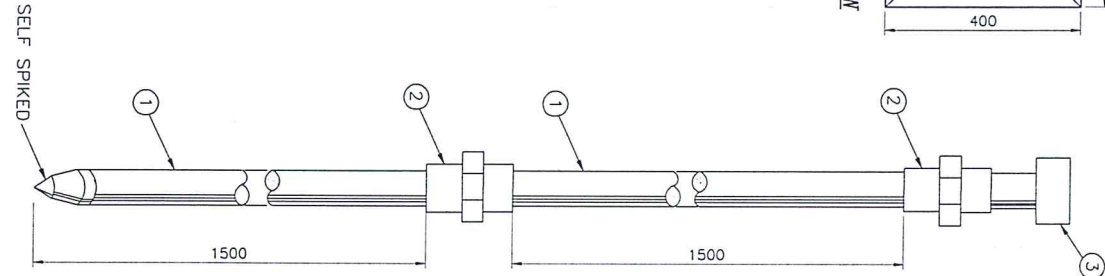
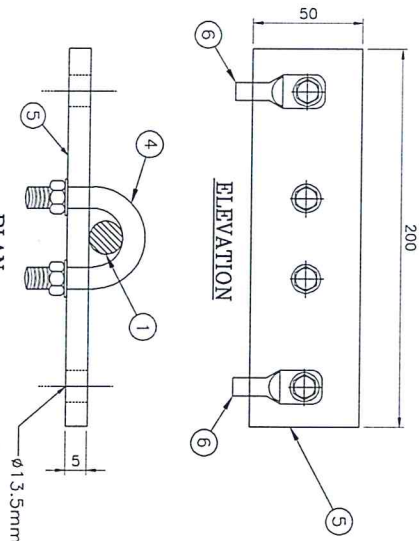
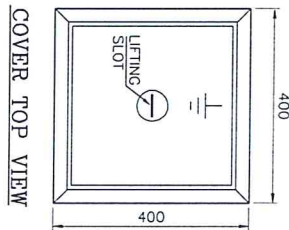
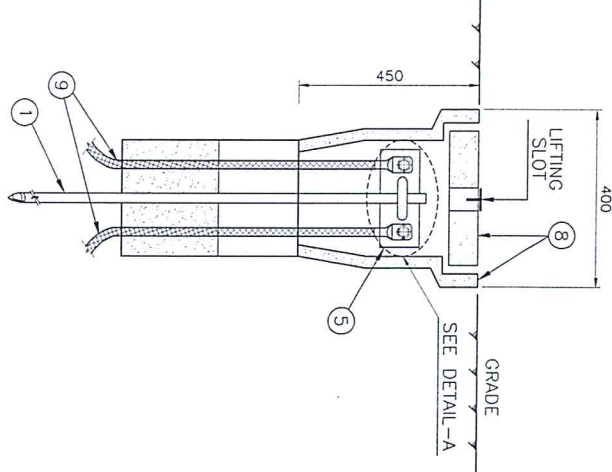
OUTDOOR EARNING LAYOUT

NO.	DESCRIPTION	DATE	BY	CHECKED
1	DESIGN	11/07/01	...	...
2	REVISION	11/07/01	...	...
3	REVISION	11/07/01	...	...
4	REVISION	11/07/01	...	...
5	REVISION	11/07/01	...	...
6	REVISION	11/07/01	...	...
7	REVISION	11/07/01	...	...
8	REVISION	11/07/01	...	...
9	REVISION	11/07/01	...	...
10	REVISION	11/07/01	...	...

BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	EARTH ROD (20mm DIA. 3 METER LENGTH) COMPOSED OF 10 SECTIONS EACH 1.5 METER, TYPE SSR-205	H0G STEEL	EARTHING SUPPLIER
2	2	EA	EXTERNAL COUPLING	H0G STEEL	EARTHING SUPPLIER
3	1	EA	3/4" DRIVING STUD	H0G STEEL	EARTHING SUPPLIER
4	1	EA	U-BOLT ROD CLAMP WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
5	1	EA	BAR COMPLETE WITH 4 HOLES. (200x50x5mm)	STAINLESS STEEL	EARTHING SUPPLIER
6	2	EA	COMPRESSION LUGS FOR 95mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 95/10	TINNED COPPER	EARTHING SUPPLIER
7	2	EA	M10X30 BOLT WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
8	1	EA	CONCRETE PIT 400X400mm, 450mm LENGTH WITH COVER & LIFTING SLOT	CONCRETE	CONSTRUCTION CONTRACTOR
9	AR	MT	95mm <sup>2</sup> INSULATED/BARE EARTHING CONDUCTOR	COPPER	CABLES SUPPLIER

NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-316.



EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.  
EGPC  
المدينة العامة المصرية للنفط  
لـ جـ لـ المينة العامة المصرية للنفط  
AT : EGYPT  
الموقع : مصر

EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
HDG STEEL EARTH ROD  
الدائرة الهندسية للصناعات البترولية والكيماويات

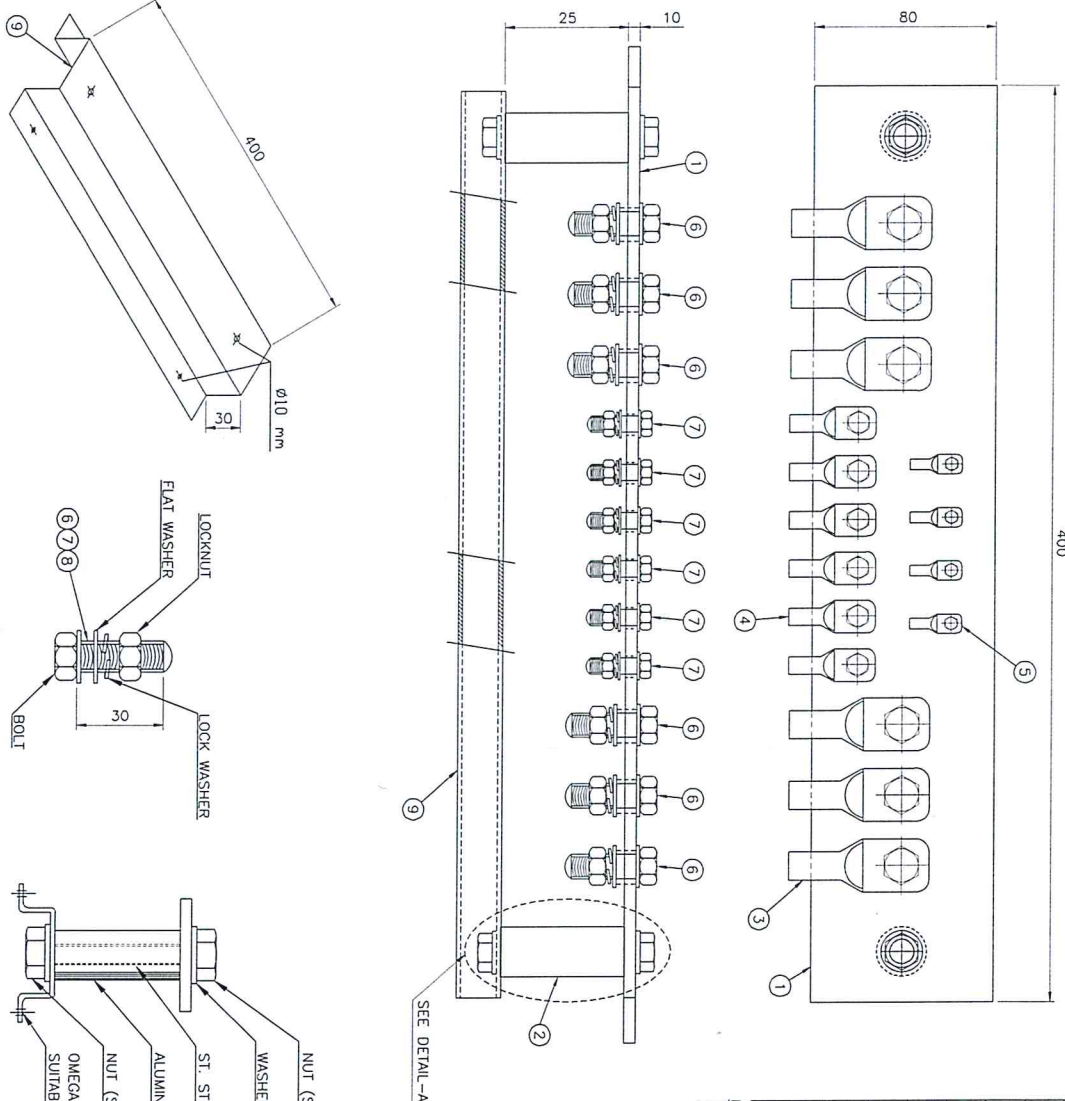


SCALE	DOCUMENT NUMBER	SHEET	REVISION
NONE	01251-100-000-EID-003	04/29	0

BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	POTENTIAL EARTHING BAR (400x80x10mm)	TINNED COPPER	EARTHING SUPPLIER
2	2	EA	SPACER, WITH ALL FIXATION ACCESSORIES	ALUMINUM	EARTHING SUPPLIER
3	6	EA	COMPRESSION LUG FOR 95mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 95/12	TINNED COPPER	EARTHING SUPPLIER
4	6	EA	COMPRESSION LUG FOR 35mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 35/10	TINNED COPPER	EARTHING SUPPLIER
5	4	EA	COMPRESSION LUG FOR 16mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 16/8	TINNED COPPER	EARTHING SUPPLIER
6	6	EA	M12X30 BOLT, WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
7	6	EA	M10X30 BOLT, WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
8	4	EA	M8X30 BOLT, WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
9	1	EA	OMEGA BAR WITH ALL FIXATION ACCESSORIES	HOG STEEL	EARTHING SUPPLIER

NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-316.



DETAIL-A

ST. ST. 316 (M08 & M10 & M12)

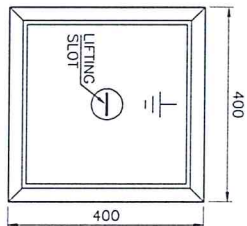
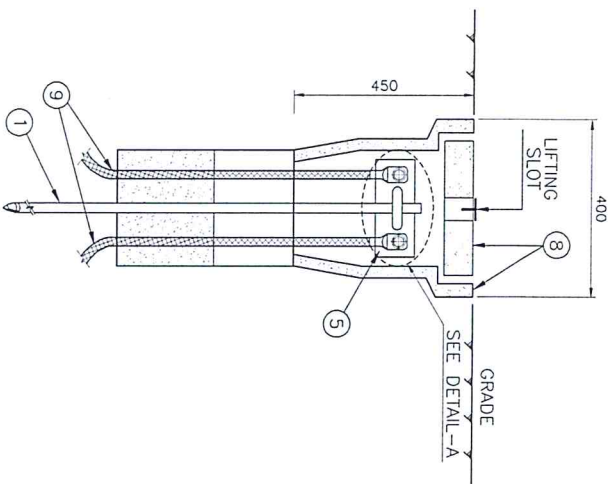
EGPC  
EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
POTENTIAL EARTH BAR (EB)



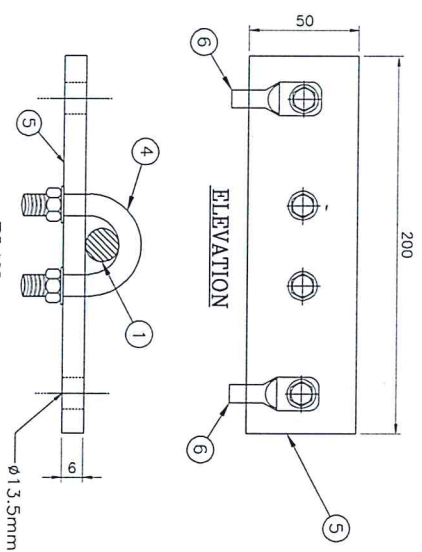
BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	EARTH ROD (3/4" DIA. 3 METER LENGTH) COMPOSED OF TO SECTIONS EACH 1.5 METER, FURSE TYPE RB310	COPPER CLAD	EARTHING SUPPLIER
2	2	EA	EXTERNAL COUPLING, FURSE TYPE CG370	COPPER CLAD	EARTHING SUPPLIER
3	1	EA	3/4" DRIVING STUD, FURSE TYPE ST300	SOLID COPPER	EARTHING SUPPLIER
4	1	EA	U-BOLT ROD CLAMP WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
5	1	EA	BAR COMPLETE WITH 4 HOLES, (200X50X6mm)	TINNED COPPER	EARTHING SUPPLIER
6	2	EA	COMPRESSION LUGS FOR 95mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 95/10	TINNED COPPER	EARTHING SUPPLIER
7	2	EA	M10X30 BOLT WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
8	1	EA	CONCRETE PIT 400X400mm, 450mm LENGTH WITH COVER & LIFTING SLOT	CONCRETE	CONSTRUCTION CONTRACTOR
9	AR	MT	95mm <sup>2</sup> INSULATED/BAKE EARTHING CONDUCTOR	COPPER	CABLES SUPPLIER

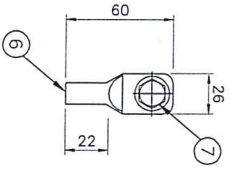
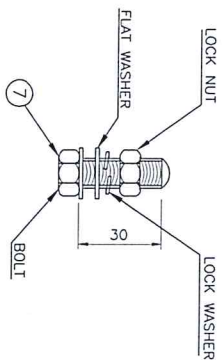
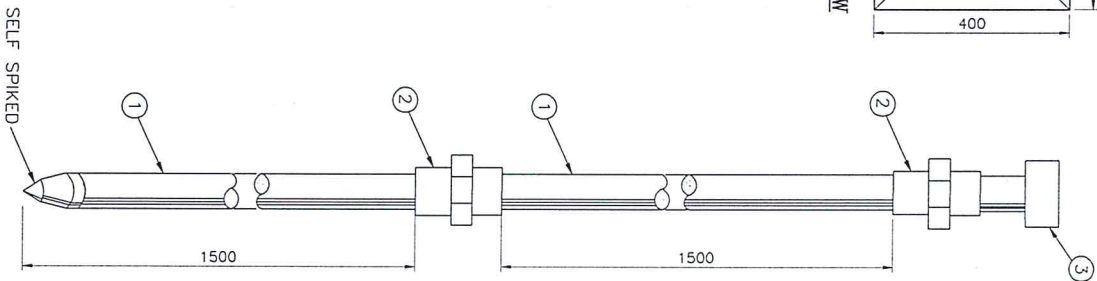
NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-316.




COVER TOP VIEW



PLAN  
DETAIL-A





EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.  
الهيئة العامة المصرية للنفط

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC)  
AT : EGPT

ج.ل. الهيئة العامة المصرية للنفط  
الموقع : مصر

EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
COPPER CLAD EARTH ROD

التركيب الهندسي للأنظمة الكهربائية والبرق

**Happy**  
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

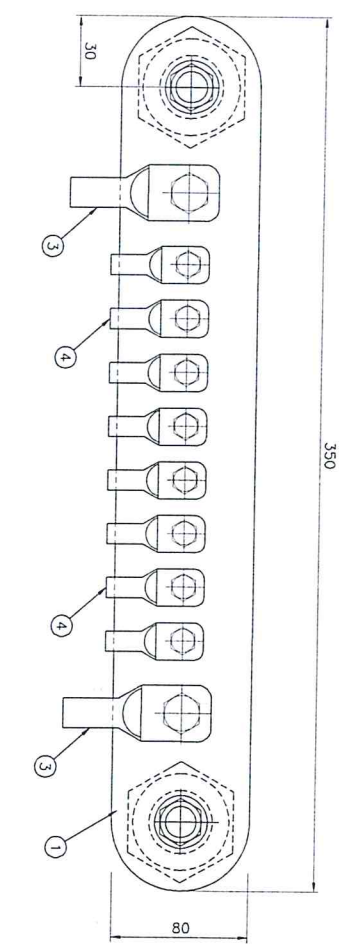
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DOCUMENT NUMBER  
01251-100-000-EID-003

SHEET  
0

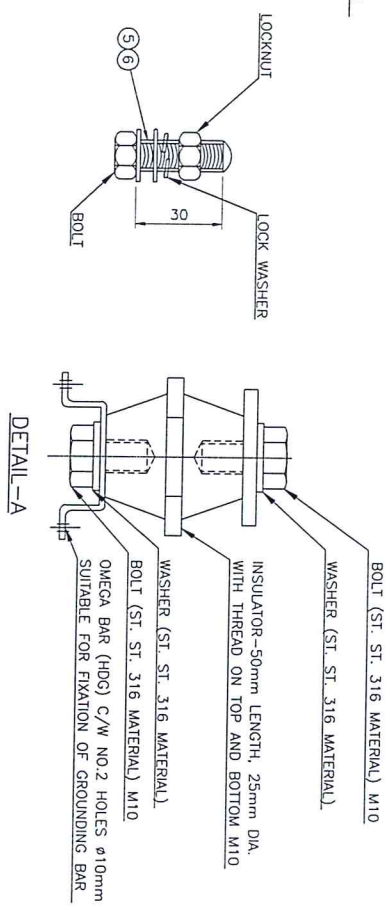
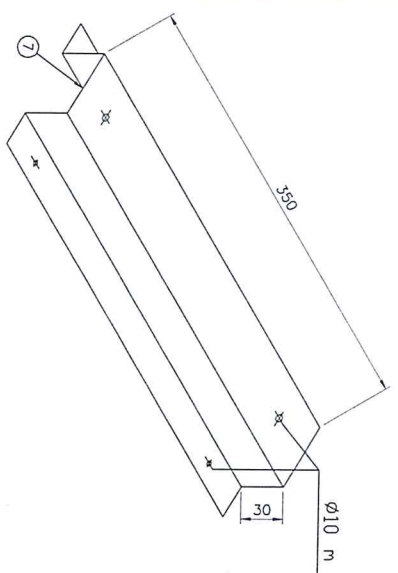
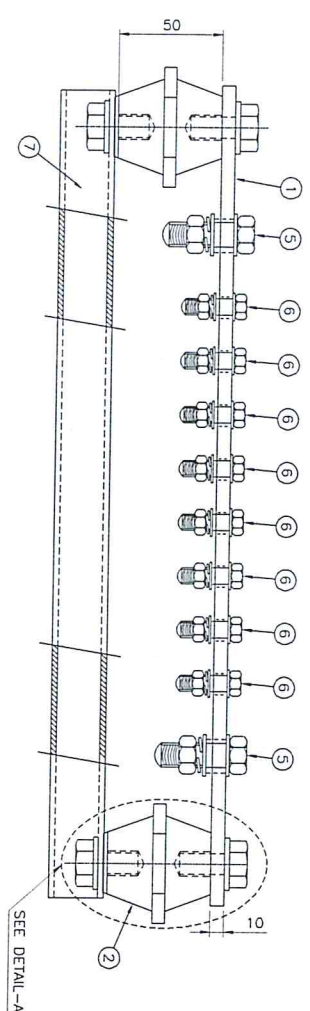
REVISION  
03/29

BILL OF MATERIAL



ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	INSTRUMENT EARTHING BAR (350x80x10mm)	TINNED COPPER	EARTHING SUPPLIER
2	2	EA	ISOLATOR 50mm LENGTH WITH ALL FIXATION ACCESSORIES	PVC	EARTHING SUPPLIER
3	2	EA	COMPRESSION LUG FOR 95mm <sup>2</sup> EARTHING CONDUCTOR ELSEWEDY TYPE SSCL 95/12	TINNED COPPER	EARTHING SUPPLIER
4	8	EA	COMPRESSION LUG FOR 16mm <sup>2</sup> EARTHING CONDUCTOR ELSEWEDY TYPE SSCL 16/8	TINNED COPPER	EARTHING SUPPLIER
5	2	EA	M12X30 BOLT WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
6	8	EA	M8X30 BOLT WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL-316	EARTHING SUPPLIER
7	1	EA	OMEGA BAR WITH ALL FIXATION ACCESSORIES	HDC STEEL	EARTHING SUPPLIER

NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-316.



EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.

المصرية العامة للبترول  
الشركة العامة للبترول

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC)

لـ : الشركة العامة للبترول

AT : EGYPT

الدولة : مصر

EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
INSTRUMENT EARTH BAR (I-EB)

التركيب الكهربائي للخطات البترولية والتخزين  
التفاصيل التركيبية للحماية من البرق  
نظام الحماية من البرق والتخزين

SCALE: NONE

DOCUMENT NUMBER: 01251-100-000-EID-003

SHEET: 06/29

REVISION: 0

ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

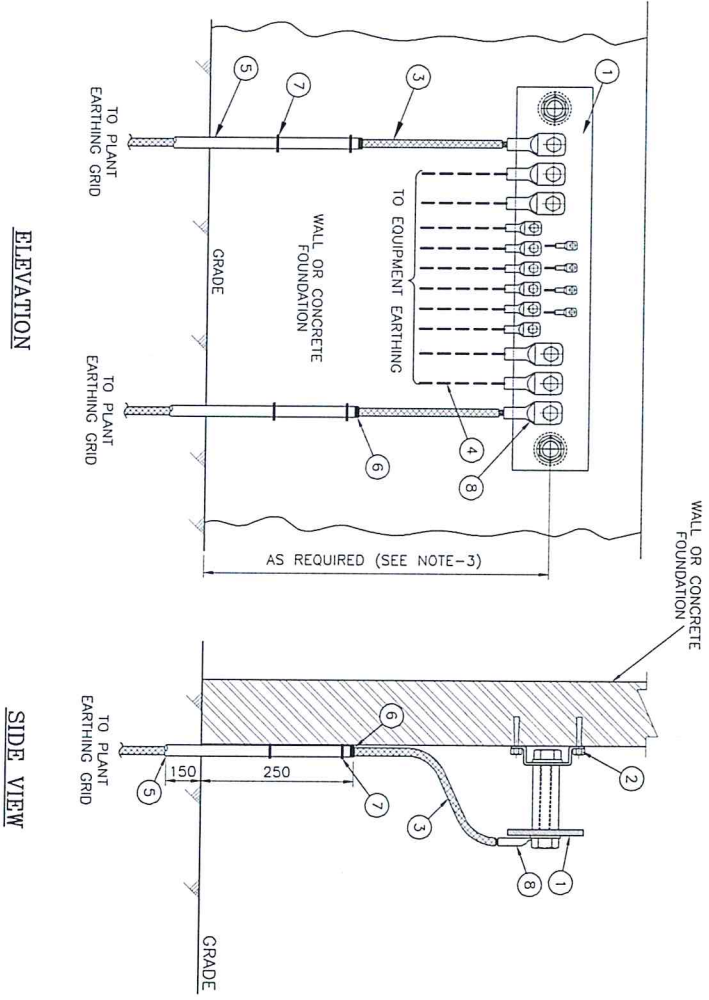
الهندسة للنفط والبتروكيماويات

Enppi

BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	POTENTIAL EARTHING BAR (REFER TO SHEET NO.5 FOR MORE DETAILS)	TINNED COPPER	EARTHING SUPPLIER
2	4	EA	WEDGE ANCHOR WITH ALL FIXATION ACCESSORIES	STAINLESS STEEL - 316	CONSTRUCTION CONTRACTOR
3	AR	MT	95mm <sup>2</sup> EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
4	AR	MT	35 OR 16mm <sup>2</sup> EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
5	AR	MT	1.5" CONDUIT	HEAVY DUTY PVC	CONSTRUCTION CONTRACTOR
6	AR	-	SEALING FOAM	OIL RESISTANT PUTTY	CONSTRUCTION CONTRACTOR
7	AR	EA	CABLE/CONDUIT CLAMP WITH FIXATION ACCESSORIES	HDG. STEEL	CONSTRUCTION CONTRACTOR
8	2	EA	COMPRESSION LUG FOR 120mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 120/12	TINNED COPPER	EARTHING SUPPLIER

- NOTES:
1. ALL DIMENSIONS ARE IN mm.
  2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL - 316.
  3. INSTALLATION HEIGHT SHALL BE AS FOLLOW:
    - 1000mm INSIDE SUBSTATION CELLAR.
    - 500mm IN PLANT AREA.



ELEVATION

SIDE VIEW

EGPC

THE EGYPTIAN GENERAL PETROLEUM CO.

EGPC

الموجة العامة المصرية للبترول

شركة البترول العامة المصرية

لاجل الموجة العامة المصرية للبترول

الاسم : مصر

EGPC CRUDE OIL TANK FARM

ELECTRICAL INSTALLATION DETAILS

EARTHING AND LIGHTNING PROTECTION SYSTEM

POTENTIAL EARTH BAR WALL/CONCRETE MOUNTED

النموذج الهندسي للتركيبات الكهربائية والحماية

Enppi

ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

DOCUMENT NUMBER

01251-100-000-EID-003

SCALE

NONE

SHEET

0

REVISION

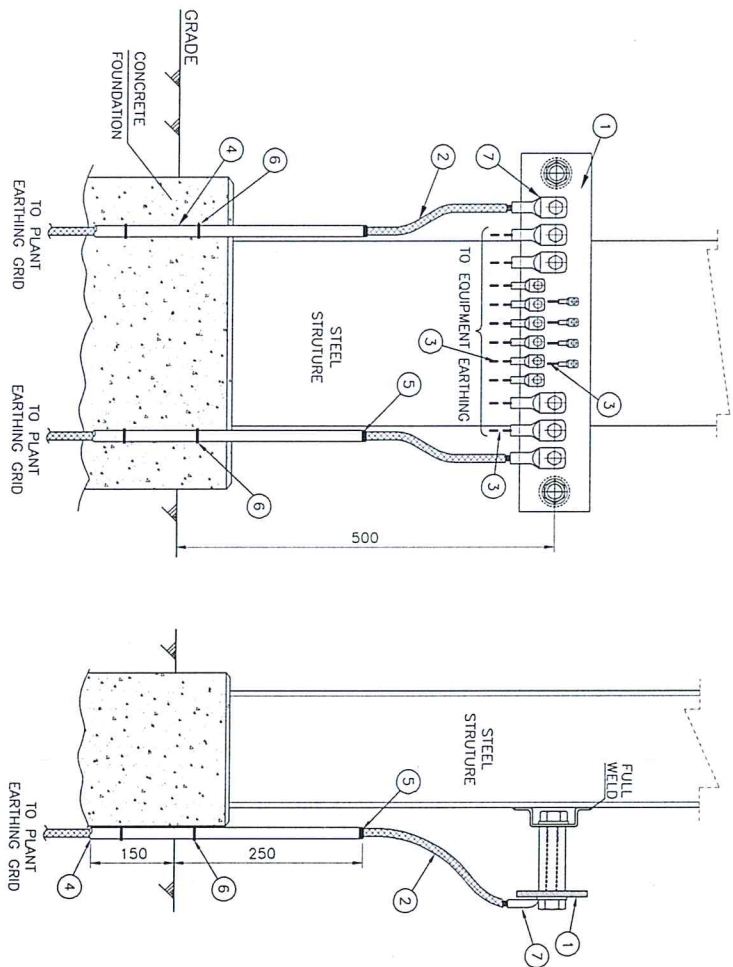
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BILL OF MATERIAL


ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	POTENTIAL EARTHING BAR (REFER TO SHEET NO.5 FOR MORE DETAIL)	TINNED COPPER	EARTHING SUPPLIER
2	AR	MT	95mm <sup>2</sup> EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
3	AR	MT	16/35/95mm <sup>2</sup> EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
4	AR	MT	1.5" CONDUIT	HEAVY DUTY PVC	CONSTRUCTION CONTRACTOR
5	AR	-	SEALING FOAM	OIL RESISTANT PUTTY	CONSTRUCTION CONTRACTOR
6	AR	EA	CABLE/CONDUIT CLAMP WITH FIXATION ACCESSORIES	HDG STEEL	CONSTRUCTION CONTRACTOR
7	2	EA	COMPRESSION LUG FOR 120mm <sup>2</sup> EARTHING CONDUCTOR, ELSEWEDY TYPE SSCL 120/12	TINNED COPPER	EARTHING SUPPLIER

NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-S16.



ELEVATION

SIDE VIEW



EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.  
EGPC

شركة العامة المصرية للبترويل  
جـيل الحياة العامة المصرية للبترويل  
البترويل : مصر

EGPC CRUDE OIL TANK FARM

ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
POTENTIAL EARTH BAR STRUCTURE/SKID MOUNTED

التركيب الكهربائي للهيكل والحاويات

ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE: NONE

DOCUMENT NUMBER: 01251-100-000-EID-003

SHEET: 08/29

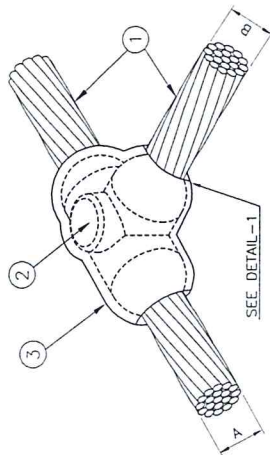
REVISION: 0

# BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	AR	MT	INSULATED/BARE EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
2	1	EA	THERMOWELD (CADWELD) CONNECTION, FURSE TYPE AS PER TABLE-1 & TABLE-2	SEE TABLE-1	EARTHING SUPPLIER
3	AR	-	ELECTRICAL RUBBER TAPE FOR MOISTURE CONTROL	-	CONSTRUCTION CONTRACTOR
4	AR	EA	SLEEVE S103 FOR 16mm <sup>2</sup>	COPPER	EARTHING SUPPLIER

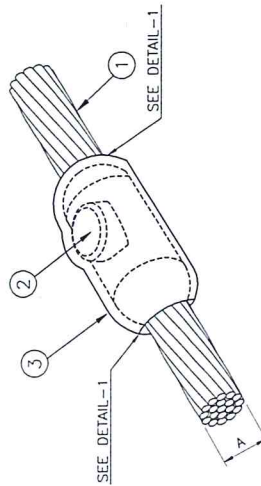
NOTE:

1. EACH MOULDED IS SUPPLIED WITH HANDEL CLAMP TYPE (HCPK4).



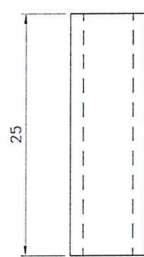
TEE SIZE (RUN/BRANCH)	EXOTHERMIC CODE	MOULD CODE	A (mm <sup>2</sup> )	B (mm <sup>2</sup> )	REMARK
120/240	200P10	CC2-4-120240	120	240	
120/95	150P10	CC2-4-12095	120	95	
120/35	90P10	CC2-4-12035	120	35	
120/16	90P10	CC2-4-12016	120	16	WITH ONE SLEEVE S103 FOR 16mm <sup>2</sup>
95/240	200P10	CC2-4-95240	95	240	
95/95	115P10	CC2-4-9595	95	95	
95/35	90P10	CC2-4-9535	95	35	
95/16	90P10	CC2-4-9516	95	16	WITH ONE SLEEVE S103 FOR 16mm <sup>2</sup>

TABLE-1

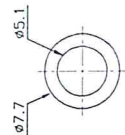


STRAIGHT SIZE	EXOTHERMIC CODE	MOULD CODE	A (mm <sup>2</sup> )	REMARK
120/120	115P10	CC1-4-120	120	
95/95	90P10	CC1-4-95	95	
35/35	32P10	CC1-4-35	35	
16/16	32P10	CC1-4-16	10	WITH TWO SLEEVES S103 FOR 16mm <sup>2</sup>

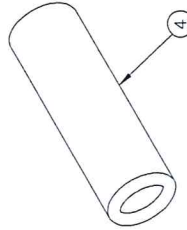
TABLE-2



VIEW-2



VIEW-1



VIEW-3

DETAIL-1



EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.

الهيئة العامة المصرية للبترول

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC)

لـ : الهيئة العامة المصرية للبترول

AT : EGYPT

البلد : مصر

EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
THERMOWELD (CADWELD) CONNECTION

الدرك فو الهيدسوق للصناعات البترولية والكابلات

**Emppi**  
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

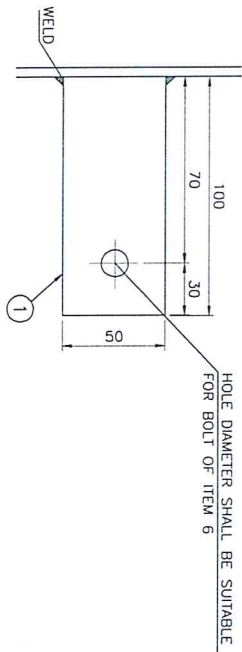
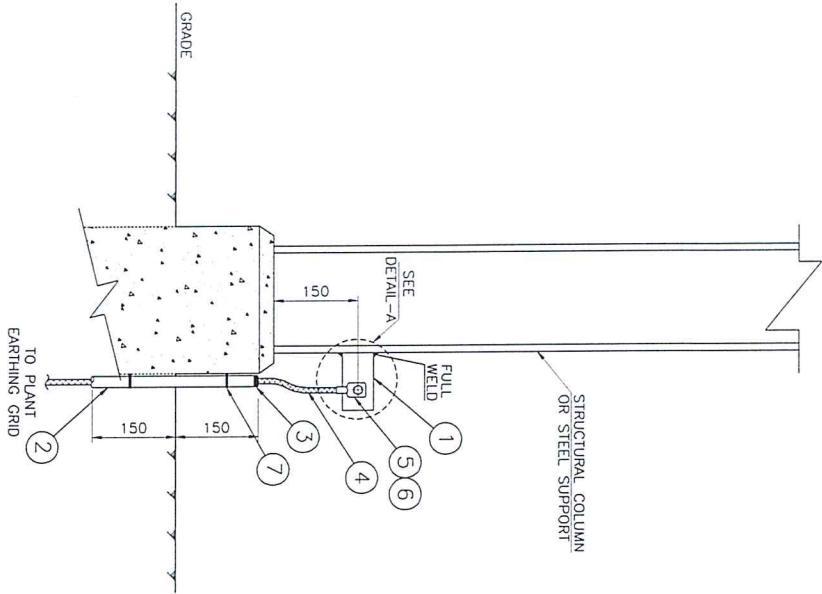
SCALE	DOCUMENT NUMBER	SHEET	REVISION
NONE	01251-100-000-EID-003	19/29	0



BILL OF MATERIAL

ITEM No.	QTY.	UNITS	DESCRIPTION	MATERIALS	SUPPLIED BY
1	1	EA	EARTHING PLATE (100X50X5mm)	H0G STEEL	CONSTRUCTION CONTRACTOR
2	AR	MT	1" CONDUIT	HEAVY DUTY PVC	CONSTRUCTION CONTRACTOR
3	AR	-	SEALING FOAM	OIL RESISTANT PUTTY	CONSTRUCTION CONTRACTOR
4	AR	MT	35mm <sup>2</sup> EARTHING CONDUCTOR	COPPER/PVC INSULATED	CABLES SUPPLIER
5	1	EA	COMPRESSION CONNECTION LUG SUITABLE FOR ITEM-4	TINNED COPPER	CABLES SUPPLIER
6	1	EA	LUG FIXATION ACCESSORIES (BOLT, NUT AND WASHER)	STAINLESS STEEL-316	CONSTRUCTION CONTRACTOR
7	AR	EA	CONDUIT CLAMP WITH FIXATION ACCESSORIES	H0G STEEL	CONSTRUCTION CONTRACTOR

NOTES:  
1. ALL DIMENSIONS ARE IN mm.  
2. ALL FIXATION ACCESSORIES SUCH AS BOLT, NUT, FLAT WASHER & LOCK WASHER ARE STAINLESS STEEL-316.

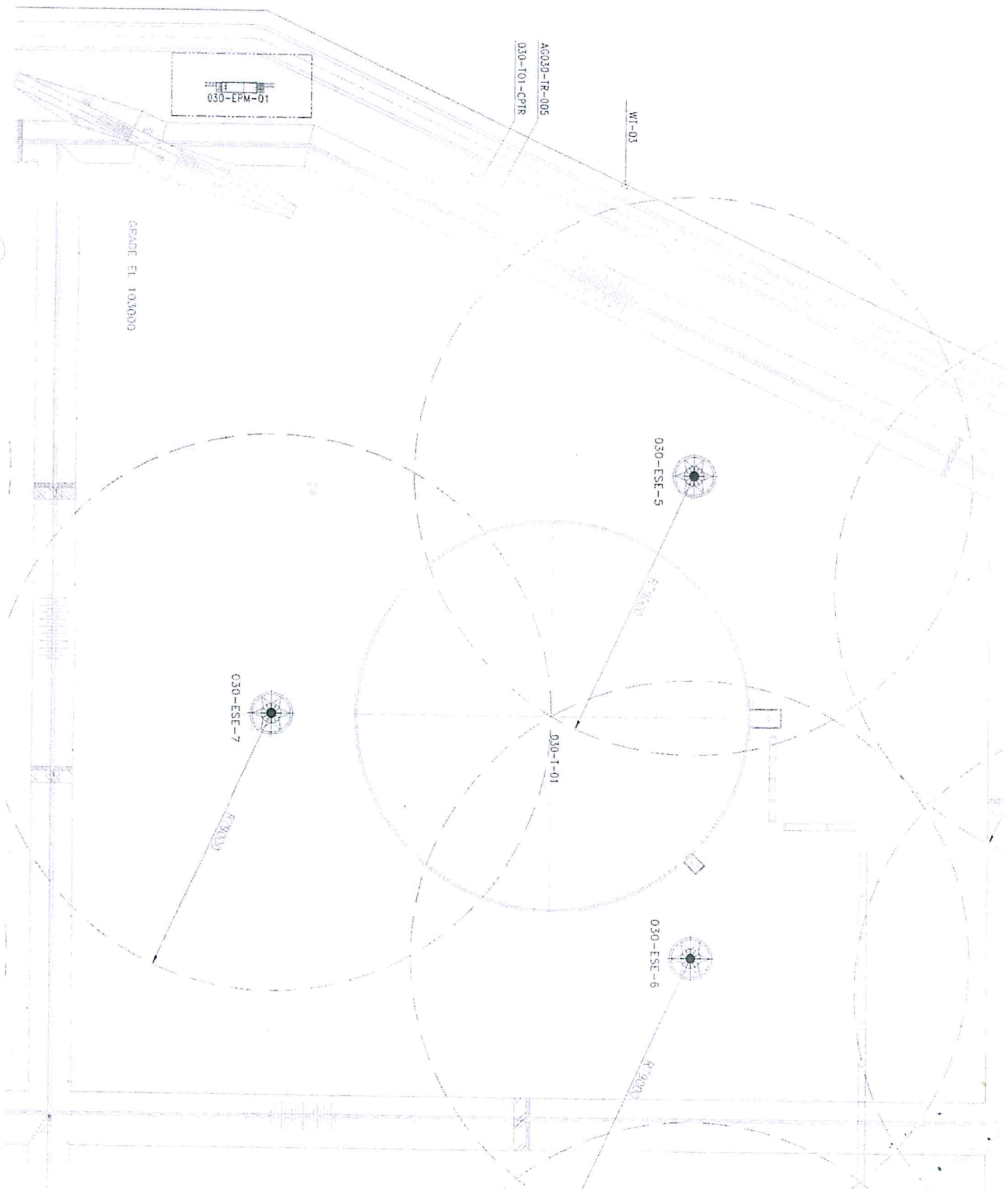


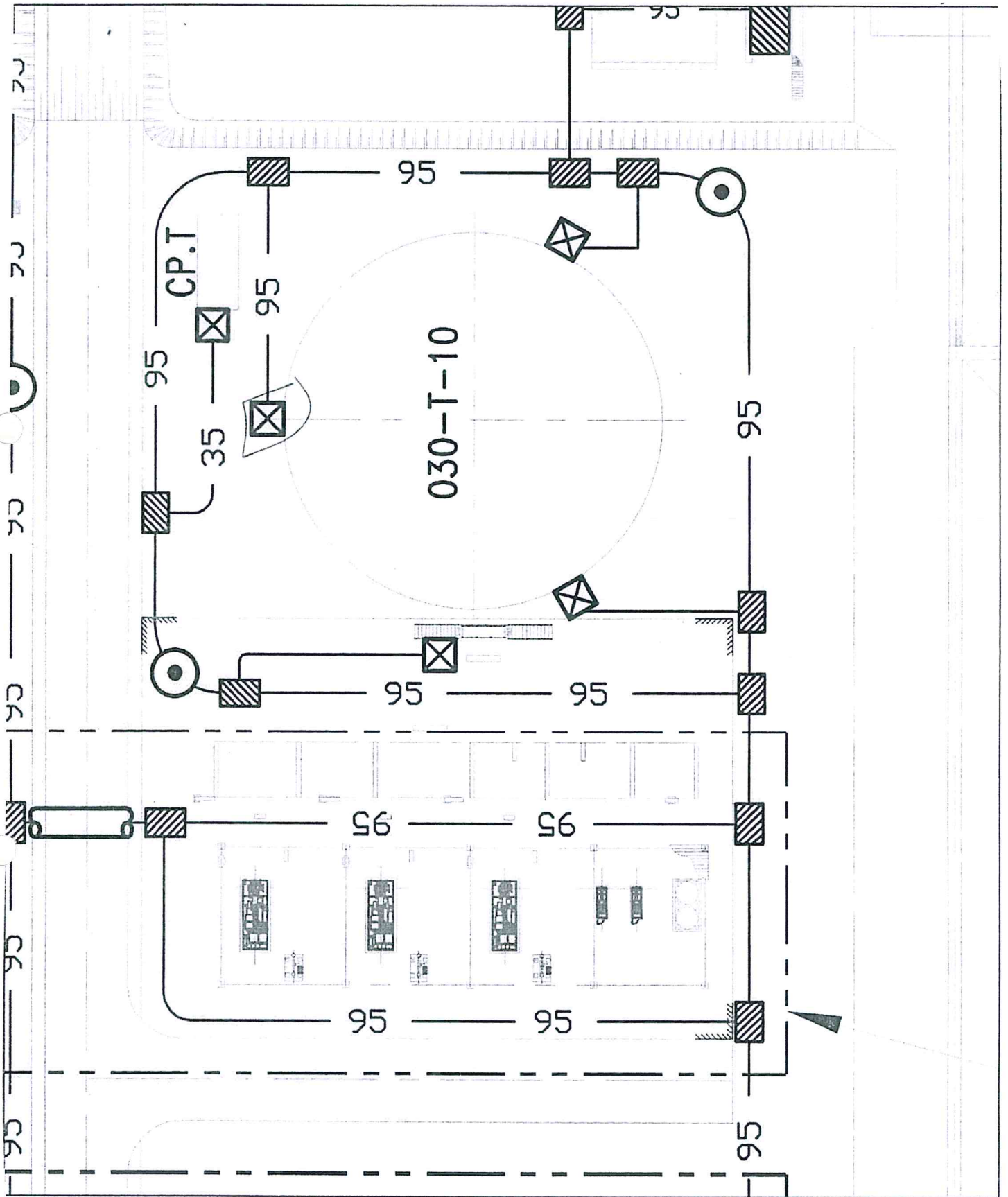
DETAIL-A

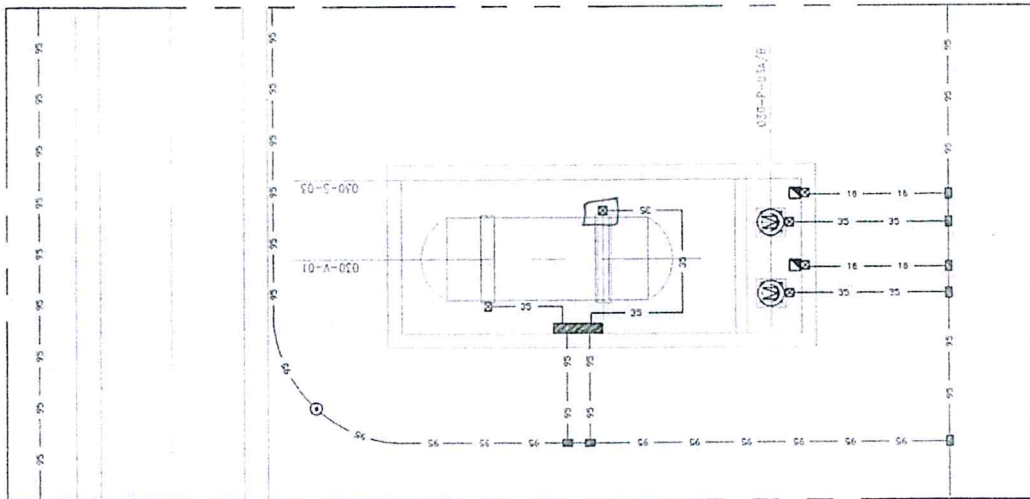
EGPC  
THE EGYPTIAN GENERAL PETROLEUM CO.  
مجموعة الشركة العامة للبترول  
EGPC  
مجموعة الشركة العامة للبترول  
FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC)  
AT : EGYPT

EGPC CRUDE OIL TANK FARM  
ELECTRICAL INSTALLATION DETAILS  
EARTHING AND LIGHTNING PROTECTION SYSTEM  
STEEL STRUCTURE COLUMN EARTHING  
التركيب الكهربائي لمعدات البترول والنفط  
التصميم الكهربائي لمعدات البترول والنفط

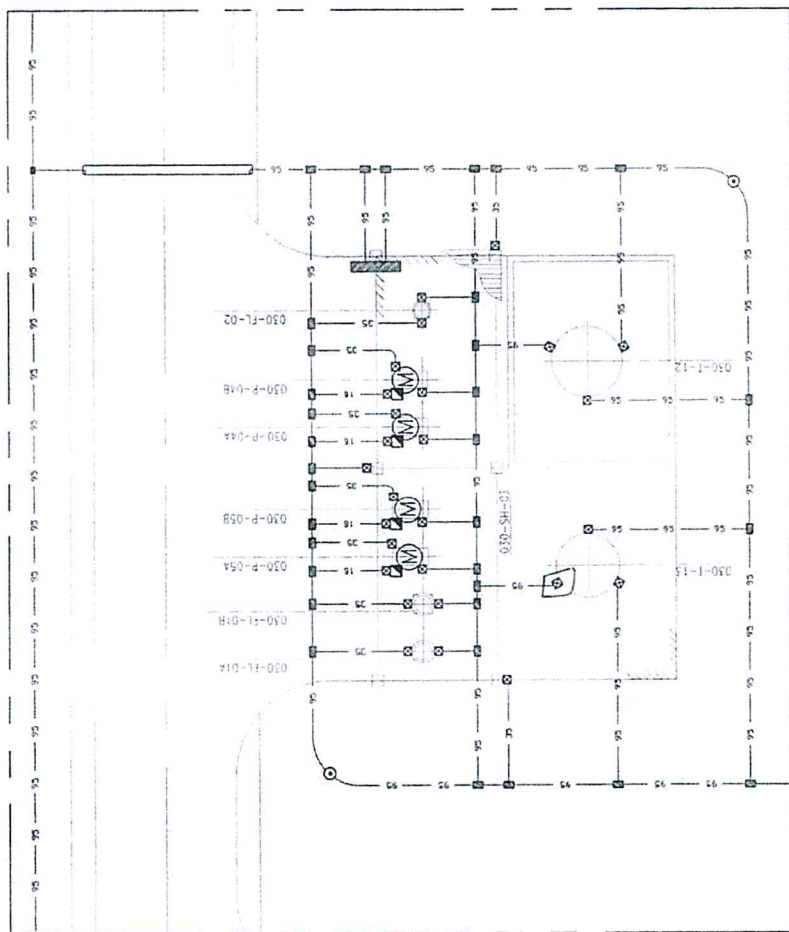
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES  
SCALE  
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DOCUMENT NUMBER  
01251-100-000-EID-003  
SHEET  
09/29  
REVISION  
1  
AS SHEET 292 X



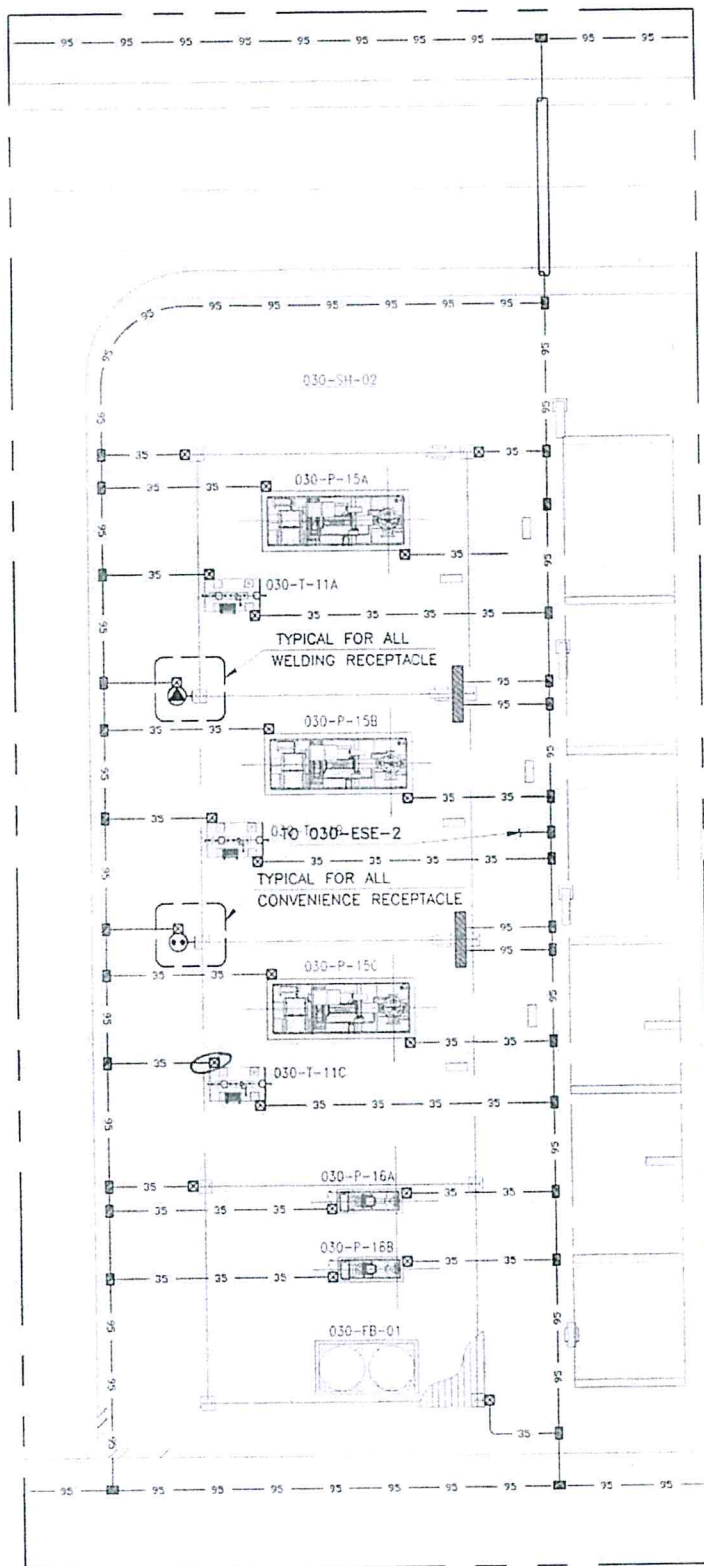




DETAIL "D"  
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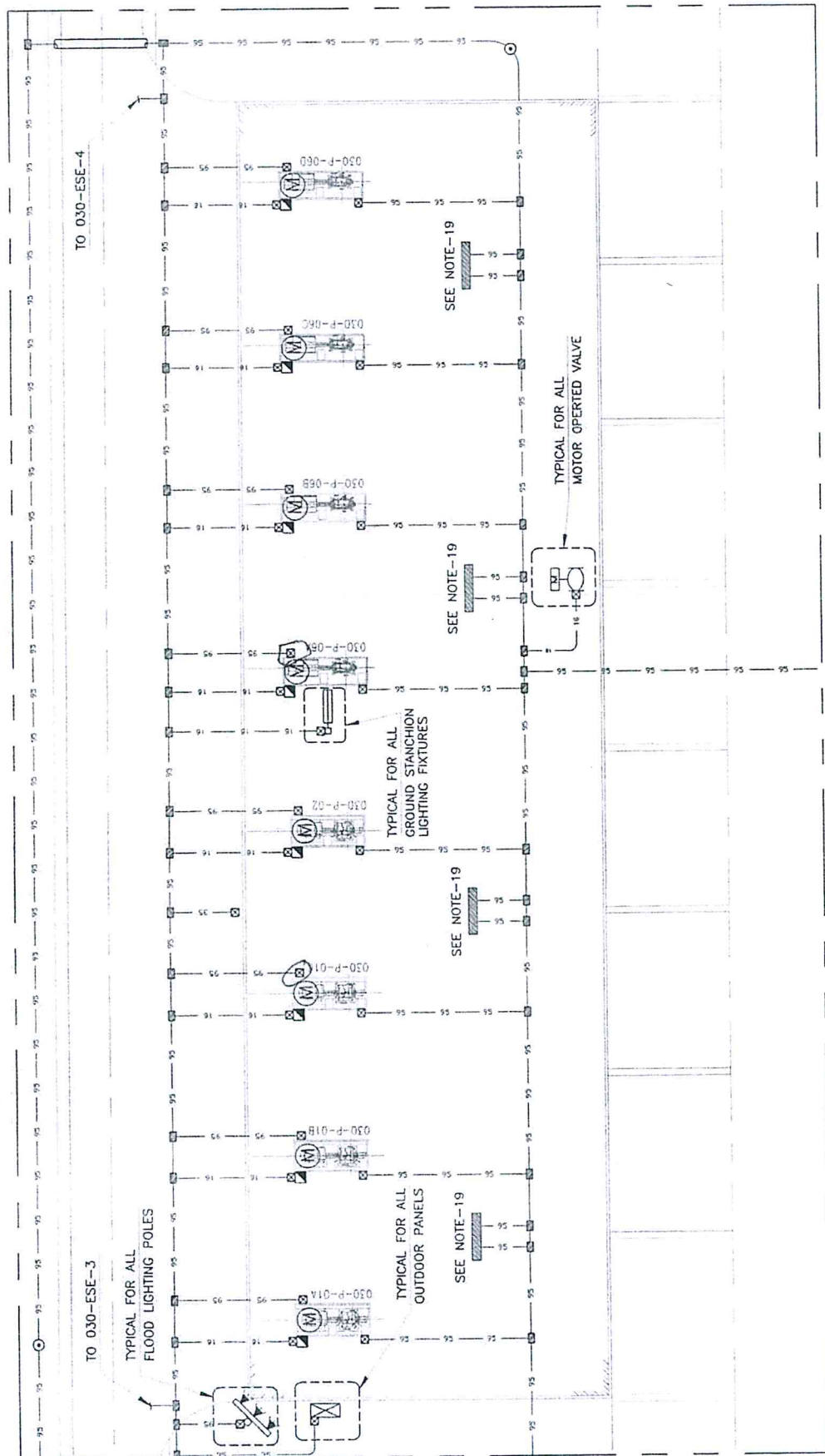


DETAIL "E"  
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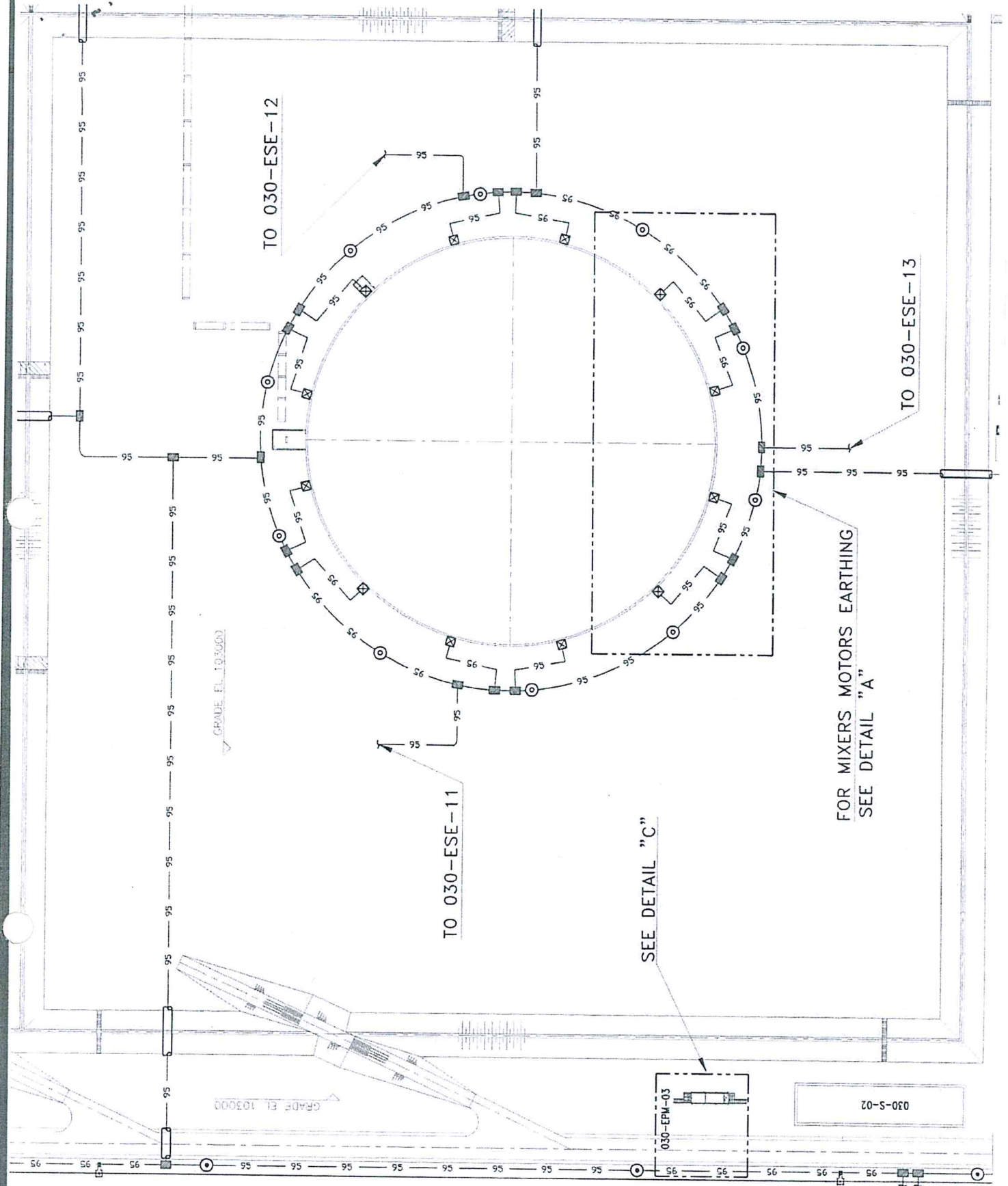


DETAIL "F"  
1:150





DETAIL "B"  
1:250









Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

### 12.03- Motor Datasheets



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.04- Electrical Cables Schedule



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.05- Electrical Cables Laying Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.06- Electrical Cables Testing Certificates

**Enppi****EGPC CRUDE OIL TANK FARM**Owner : **Egyptian General Petroleum Corporation (EGPC)**Project No: 01251-100-030  
:01251-100-031Contractor **CONSORTIUM (ENPPI / PETROJET)**Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**ACTIVITY : **EARTHING SYSTEM INSTALLATION FOR PLANT AREA**NOTIFICATION NO. : **PTJ-ELE-RFI-198** DISCIPLINE : **ELECTRICAL**DATE : **5/22/2021**

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	EARTHING SYSTEM INSTALLATION FOR Tank 03  <i>As per attached Drawing</i>	MODULE 1	22-May-21				

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

- # earthing connection point to be ground
- # Start-up & Sealing Compound material to be installed (Pore) sold

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
DATE			

ITR-QC-0001



**Enppi****EGPC CRUDE OIL TANK FARM**

INSPECTION AND TEST REPORT FOR

**EARTHING SYSTEM INSTALLATION**INSPECTION REPORT NUMBER  
PTJ-ELE-RFI-198

INSPECTION DATE &amp; TIME

ITR NUMBER  
ITR-EL-0010DISCIPLINE  
ELECTRICALSHEET NO  
1 OF 1

JOB DESCRIPTION

PLANT AREA EARTHING SYSTEM INSTALLATION

AREA DESCRIPTION

Agrood (Mo) 030 MODULE 2-1 Ahmed

NO.	Area to be inspected	RESULT		
		ACCEPT	REJECT	N/A.
1	Check Cable Type / Size as per Drawing	✓		
2	Check earthing grid route excavation depth & width	✓		
3	Cable Location, Route & Laying	✓		
4	Check tightness of all connection, and Lugs securely bolted in place	✓		
5	Conductors rising from ground are protected by conduit or sleeve	✓		
6	Installation of Earthing Rod (location/type/size)	✓		
7	Installation of Lightning Rod & Arrestor (location/type/size)	✓		
8	Protection of Earthing cable & overall earthing accessory	✓		

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0010

**Enppi****EGPC CRUDE OIL TANK FARM**

INSPECTION AND TEST REPORT FOR

**EARTHING RESISTANCE TEST**

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

DISPLINE

SHEET NO

PTJ-ELE-RFI-199

ITR-EL-0011

ELECTRICAL

1 OF 1

JOB DESCRIPTION

PLANTAREA EARTHING SYSTEM INSTALLATION

AREA DESCRIPTION

Agood (Moi)

MODULE 2

INSTRUMENT TYPE:

SERIAL:

Calibration Date

NO.	LOCATION	Tag NO	EARTHING RESISTANCE (OHM)	RESULT		
				ACCEPT	REJECT	N/A.
1	As per attached		.69 $\Omega$	✓		
2	As per attached		.61 $\Omega$	✓		
3	As per attached		.74 $\Omega$	✓		
4	As per attached		.5 $\Omega$	✓		
5	As per attached		.1 $\Omega$	✓		

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0011



**Enppi**

EGPC CRUDE OIL TANK FARM

Owner : Egyptian General Petroleum Corporation (EGPC)

Project I  
:01251

Contractor CONSORTIUM (ENPPI / PETROJET)

Docume  
Revision**REQUEST FOR INSPECTION**

ACTIVITY : EARTHING SYSTEM INSTALLATION FOR PLANT AREA

NOTIFICATION NO. : PTJ-ELE-RFI- 219 DISCIPLINE : ELECTRICAL

DATE : 6/22/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	EARTHING SYSTEM INSTALLATION FOR tank04	MODULE 1	22-Jun-21				
	As per attached Drawing						

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001



**Enppi****EGPC CRUDE OIL TANK FARM**

INSPECTION AND TEST REPORT FOR

**EARTHING SYSTEM INSTALLATION**

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-202 **219**

INSPECTION DATE &amp; TIME

ITR NUMBER

ITR-EL-0010

DISCIPLINE

ELECTRICAL

JOB DESCRIPTION

PLANT AREA EARTHING SYSTEM INSTALLATION

AREA DESCRIPTION

MODULE **2** → **1** *hmed*

NO.	Area to be inspected	RESULT		
		ACCEPT	REJECT	N/A.
1	Check Cable Type / Size as per Drawing	✓		
2	Check earthing grid route excavation depth & width	✓		
3	Cable Location, Route & Laying	✓		
4	Check tightness of all connection, and Lugs securely bolted in place	✓		
5	Conductors rising from ground are protected by conduit or sleeve	✓		
6	Installation of Earthing Rod (location/type/size)	✓		
7	Installation of Lightning Rod & Arrestor (location/type/size)			✓
8	Protection of Earthing cable & overall earthing accessory			✓

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE	<i>[Signature]</i>		<i>[Signature]</i>
DATE			

ITR-EL-0010

**Enppi****EGPC CRUDE OIL TANK FARM**

INSPECTION AND TEST REPORT FOR

**EARTHING RESISTANCE TEST**

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-195 219

INSPECTION DATE &amp; TIME

ITR NUMBER

ITR-EL-0011

DISCIPLINE

ELECTRICAL

JOB DESCRIPTION

PLANT AREA EARTHING SYSTEM INSTALLATION

AREA DESCRIPTION

MODULE 2

INSTRUMENT TYPE:

SERIAL:

Calibration Date

NO.	LOCATION	Tag NO	EARTHING RESISTANCE (OHM)	RESULT		
				ACCEPT	REJECT	N/A.
1	As Per Attached		0.17 $\Omega$	✓		
2	As Per attached		0.08 $\Omega$	✓		
3	As Per attached		0.19 $\Omega$	✓		
4	As Per attached		0.35 $\Omega$	✓		
5	As Per attached		0.7 $\Omega$	✓		

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0011





**Egyptian General Petroleum Corporation (EGPC)**

CONSORTIUM (ENPPI / PETROJET)

Contractor

EARTHING SYSTEM INSTALLATION FOR PLANT AREA

ACTIVITY :

NOTIFICATION NO.



PTJ-ELE-RFI-233

**DISCIPLINE :**

ELECTRICAL

DATE :

7/2/2021

NAME :			
SIGNATURE			DATE
PMc	ENPPI	PETROJET	

**NOTE:**

Inspection result : A - Approved    B - Reject    C - Approved with Comment

ITR-QC-0001

ITR-EL-0010

DATE			
SIGNATURE			
NAME :			
PETROJET	ENPPI	PMC	

REFERENCE DOCUMENTS:

REMARKS:

NO.	Area to be inspected	ACCEPT	REJECT	N/A.	RESULT
1	Check Cable Type / Size as per Drawing	✓			
2	Check earthing grid route excavation depth & width	✓			
3	Cable Location, Route & Laying	✓			
4	Check tightness of all connection, and Lugs securely bolted in place	✓			
5	Conductors rising from ground are protected by conduit or sleeve	✓			
6	Installation of Earthing Rod (location/type/size)	✓			
7	Installation of Lightning Rod & Arrestor (location/type/size)				✓
8	Protection of Earthing cable & overall earthing accessory				✓

INSPECTION AND TEST REPORT FOR	EARTHING SYSTEM INSTALLATION			
INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISCIPLINE	SHEET NO
PTJ-ELE-RFI-202		ITR-EL-0010	ELECTRICAL	1 OF 1
JOB DESCRIPTION	AREA DESCRIPTION			
PLANT AREA EARTHING SYSTEM INSTALLATION	MODULE 2			



EGPC CRUDE OIL TANK FARM





NO.	LOCATION	Tag NO	EARTHING RESISTANCE (OHM)	ACCEPT	REJECT	RESULT
1	As per attached		.4 Ω	✓		
2	As per Attached		.15 Ω	✓		
3	As per Attached		.95 Ω	✓		
4	As per attached		.7 Ω	✓		
5	As per attached		.22 Ω	✓		

REMARKS:

REFERENCE DOCUMENTS:

NAME :	PETROJET	ENPPI	PMC
SIGNATURE		Islam Shent	
DATE			

**NOTE:**

[illegible]

## REQUEST FOR INSPECTION

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001
Revision No. : 00		



EGPC CRUDE OIL TANK FARM

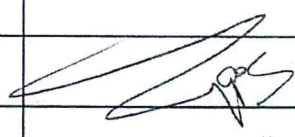
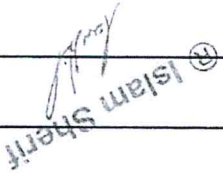
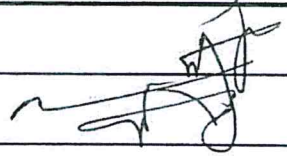




NO.	Area to be inspected	RESULT		
		ACCEPT	REJECT	N/A.
1	Check Cable Type / Size as per Drawing	✓		
2	Check earthing grid route excavation depth & width	✓		
3	Cable Location, Route & Laying	✓		
4	Check tightness of all connection, and Lugs securely bolted in place	✓		
5	Conductors rising from ground are protected by conduit or sleeve	✓		
6	Installation of Earthing Rod (location/type/size)	✓		
7	Installation of Lightning Rod & Arrestor (location/type/size)	✓		
8	Protection of Earthing cable & overall earthing accessory	✓		

REMARKS:

REFERENCE DOCUMENTS:

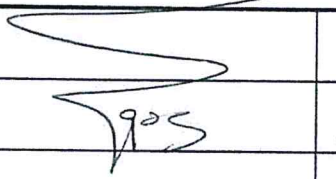
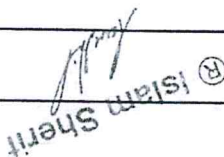
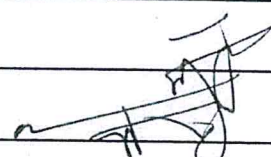
NAME :	PETROJET	ENPPI	PMC
SIGNATURE			
DATE			



NO.	LOCATION	Tag NO	EARTHING RESISTANCE (OHM)	ACCEPT	REJECT	RESULT
1			0.8	✓		
2			0.01	✓		
3			0.07	✓		
4			0.9	✓		
5			1.2	✓		

REMARKS:

REFERENCE DOCUMENTS:

NAME :	PETROJET	ENPPI	PMC
SIGNATURE			
DATE			



7/31/2021



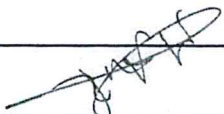
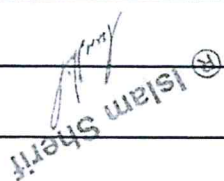
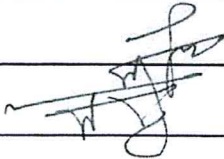
Inspection result : A - Approved B - Reject C - Approved with Comment

PMC

DATE \_\_\_\_\_

ITR-QC-0001



		<b>EGPC CRUDE OIL TANK FARM</b>			
<b>EARTHING SYSTEM INSTALLATION</b>					
INSPECTION AND TEST REPORT FOR					
PTJ-ELE-RFI- 245		ITR NUMBER ITR-EL-0010		DISCIPLINE ELECTRICAL	
INSPECTION REPORT NUMBER		INSPECTION DATE & TIME		AREA DESCRIPTION MODULE 1	
JOB DESCRIPTION PLANT AREA EARTHING SYSTEM INSTALLATION					
RESULT					
NO.		Area to be inspected		ACCEPT REJECT N/A	
1		Check Cable Type / Size as per Drawing		<input checked="" type="checkbox"/>	
2		Check earthing grid route excavation depth & width		<input checked="" type="checkbox"/>	
3		Cable Location, Route & Laying		<input checked="" type="checkbox"/>	
4		Check tightness of all connection, and Lugs securely bolted in place		<input checked="" type="checkbox"/>	
5		Conductors rising from ground are protected by conduit or sleeve		<input checked="" type="checkbox"/>	
6		Installation of Earthing Rod (location/type/size)		<input checked="" type="checkbox"/>	
7		Installation of Lightning Rod & Arrestor (location/type/size)		<input checked="" type="checkbox"/>	
8		Protection of Earthing cable & overall earthing accessory		<input checked="" type="checkbox"/>	
REMARKS:					
REFERENCE DOCUMENTS:					
NAME :		PETROJET		ENPPI	
SIGNATURE					
DATE				PMC	

ITR-EL-0010

NO.	LOCATION	Tag NO	EARTHING RESISTANCE (OHM)	ACCEPT	REJECT	RESULT
1	As per attached		0.017 Ω	✓		
2	As per attached		0.85 Ω	✓		
3	As per attached		0.12 Ω	✓		
4	As per attached		0.95 Ω	✓		
5	As per attached		1.05 Ω	✓		

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.07- Electrical Cables Termination Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.08- FAT Reports & Certificates



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.09- SAT Reports & Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.10- Electrical Pre-Commissioning Check Lists

## PRE-COMMISSIONING CHECK LIST GROUNDING SYSTEM EL-33 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Plant Area Earthing System

**SYSTEM ID** : 030-EL-013

**SUB-SYSTEM NAME** : Plant Area Earthing System

**SUB-SYSTEM ID** : 030-EL-013

**ITEM TAG No.** : Earthing

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check that all equipment, steel structure, tanks..etc. are grounding as per grounding layout and installation details.	✓	
3	Check termination & connection of all grounding cables.	✓	
4	Inspect earthing cable lugs are correctly sized and fitted correctly.	✓	
5	Check and ensure that all contacts are clean and greased.	✓	
6	Check that cables rising from ground are protected by means of a conduit (PVC conduits).	✓	
7	Check that buried connections of cables are protected against damp with adhesive tape.	✓	
8	Check the grounding pits for mechanical damage.	✓	
9	Check the connection with the existing network (If Any).	✓	
10	Check the grounding loops of separate networks (IS, NIS,..).	✓	
11	Check the connection of separate networks (lightning, IS, NIS,...).	✓	

### REMARKS AND OBSERVATIONS :

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST GROUNDING SYSTEM EL-33 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Plant Area Earthing System

**SYSTEM ID** : 030-EL-013

**SUB-SYSTEM NAME** : Plant Area Earthing System

**SUB-SYSTEM ID** : 030-EL-013

**ITEM TAG No.** : Earthing



**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Check that all Grounding bus- bar joints or fixing bolts are well tightened.	✓	
13	Check continuity test of grounding branches.	✓	
14	Measure & record resistance of each electrode (unconnected).	✓	
15	Measure & record overall earth resistance after all equipment and Earth electrodes are connected.	✓	
16	Verify the location, type & size of equipment taps w.r.t approved drawings.	✓	
17	Calibration test certificate of testing equipment to be checked.	✓	
18	Ensure that different earthing networks (IS, NIS, ...etc) are connected to avoid potential differences.	✓	
19	Check ground well locations w.r.t approved drawings.	✓	
20	Contractor marked up drawings is available.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE		® Islam Sherif	



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 12.11- Electrical Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

### 13- Electrical Commissioning





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

### 13.01- Electrical -Commissioning Check Lists



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 13.02- Electrical Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 14- Red Marked-up Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 14.01- P&ID



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 14.02- Instrumentation Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-EL-013
System Description	Plant Area Earthing System

## 14.03- Electrical Drawings